

## PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

To:  
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14/8

REC'D 20 JUN 2005  
PCT WIPO PCT

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing (day/month/year) 31 MAY 2005 (31.05.2005)
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## FOR FURTHER ACTION

See paragraph 2 below

Applicant's or agent's file reference

FPM-04-0112

International application No.  
**PCT/KR2005/000223**International filing date (day/month/year)  
**27 JANUARY 2005 (27.01.2005)**Priority date(day/month/year)  
30 JANUARY 2004 (30.01.2004)

International Patent Classification (IPC) or both national classification and IPC

**IPC7 H05H 1/46**

Applicant

**CHANGJO ENGINEERING CO., LTD. et al.**

## 1. This opinion contains indications relating to the following items:

- Box No. I Basis of the opinion
- Box No. II Priority
- Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- Box No. IV Lack of unity of invention
- Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- Box No. VI Certain documents cited
- Box No. VII Certain defects in the international application
- Box No. VIII Certain observations on the international application

## 2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

## 3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/KR  
  
 Korean Intellectual Property Office  
 920 Dunsan-dong, Seo-gu, Daejeon 302-701,  
 Republic of Korea  
 Facsimile No. 82-42-472-7140

Authorized officer  
 SEO, Hawthorne  
 Telephone No. 82-42-481-5670



WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/KR2005/000223

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

This opinion has been established on the basis of a translation from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).

2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

- a sequence listing  
 table(s) related to the sequence listing

b. format of material

- in written format  
 in computer readable form

c. time of filing/furnishing

- contained in the international application as filed.  
 filed together with the international application in computer readable form.  
 furnished subsequently to this Authority for the purposes of search.

3.  In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/KR2005/000223

**Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Claims	YES
	Claims 1, 5	NO
Inventive step (IS)	Claims	YES
	Claims 1, 5	NO
Industrial applicability (IA)	Claims 1-28	YES
	Claims	NO

**2. Citations and explanations :**

The following documents are referred to:

D1 EP 1.383 359 A2

D2 JP 1,1-191500

D1 discloses method and arrangement for generating an atmospheric pressure glow (APG) plasma (1), wherein the plasma (1) is generated in a discharge space (10) between a plurality of electrodes (3, 4) and a dielectric (2) is present on at least one of the electrodes (4), which dielectric (2) has a boundary surface with the plasma (1) enabling interactions between the plasma (1) and the boundary surface of the dielectric (2). The dielectric (2) is arranged for releasing electrons contributing to the plasma (1) from the boundary surface by the interactions.

D2 discloses glow discharge electrodes for performing glow discharge under pressure near atmospheric pressure to obtain stable discharge even under operation for many hours by covering glow discharge electrodes for performing glow discharge under pressure near atmospheric pressure, with alumina sintered ceramic with specific purity or more.

The present claims 1 and 5 discloses a apparatus generating glow plasma on a wide surface under atomospheric pressure with two layers of dielectric material between electrode and the material under process, electrode and auxiliary ground electrode, respectively. The apparatus described in the claims 1 and 5 is regarded to be easily rendered out from D1 and D2; adopting the electrodes covered by dielectric material of D1 into the APG plasma arrangement of D1.

Thus the subject matter of present claims 1 and 5 do not satisfy the criteria set forth in Article 33(2) and (3) PCT because the subject matter of claims 1 and 5 is not new in respect of prior art as defined in the regulations (Rule 64(1)-(3) PCT) and/or does not involve an inventive step (Rule 65(1)(2) PCT).

Thus the subject matter of claims 1 and 5 is neither novel nor inventive.